



Night Vision Devices

Terminal Learning Objective

ACTION: Observe the general operational characteristics and limitations of Night Vision Goggles (AN/PVS) and the Driver Vision Enhancer (DVE).

Terminal Learning Objective

CONDITION: Given this lesson, Student Study Guide, viewgraphs, NVG's with operator's manual.

Terminal Learning Objective

STANDARD: The student will demonstrate a basic knowledge of the general characteristics and limitations of NVG's. You will demonstrate your ability to wear and maintain the NVG's IAW operator's manual without causing damage to the system.

NIGHT VISION GOGGLE DRIVING OPERATIONS

Night Operations

**Depth Perception
Distance** →

Height and

→
Visual Acuity

**Terrain Features &
Obstacles**

→
Night Vision Techniques

**Effective Night
Operations**

NIGHT VISION GOGGLE DRIVING OPERATIONS

Types of Vision

PHOTOPIC



DAYLIGHT HOURS

MESOPIC



DAWN, DUSK, MID-LIGHT

SCOTOPIC



DAYLIGHT HOURS

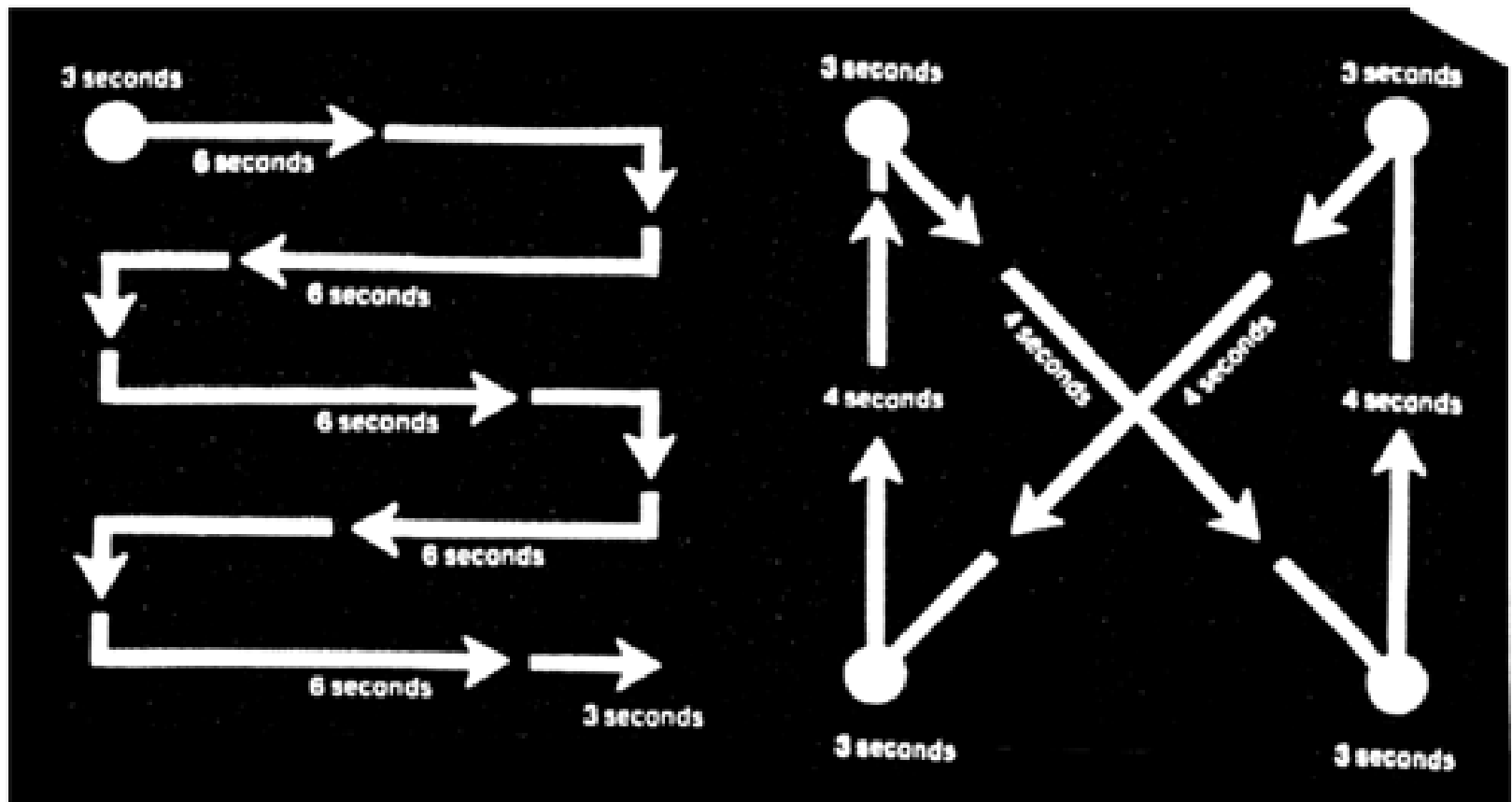
NIGHT VISION GOGGLE DRIVING OPERATIONS

Self-Imposed Stresses

- **Smoking**
- **Alcohol**
- **Fatigue**
- **Nutrition**
- **Physical Condition**
- **Sleep**

NIGHT VISION GOGGLE DRIVING OPERATIONS

Night Vision Scanning Techniques



NIGHT VISION GOGGLE DRIVING OPERATIONS

Depth Perception

**The quality of seeing objects as
three-dimensional solids in space.**

NIGHT VISION GOGGLE DRIVING OPERATIONS

Distance Estimation/Depth Perception



NIGHT VISION GOGGLE DRIVING OPERATIONS

Sources of Ambient Light

- **The Moon**
- **Background Lighting**
- **Artificial Lights**
- **Solar Lights**
- **Lasers**

NIGHT VISION GOGGLE DRIVING OPERATIONS

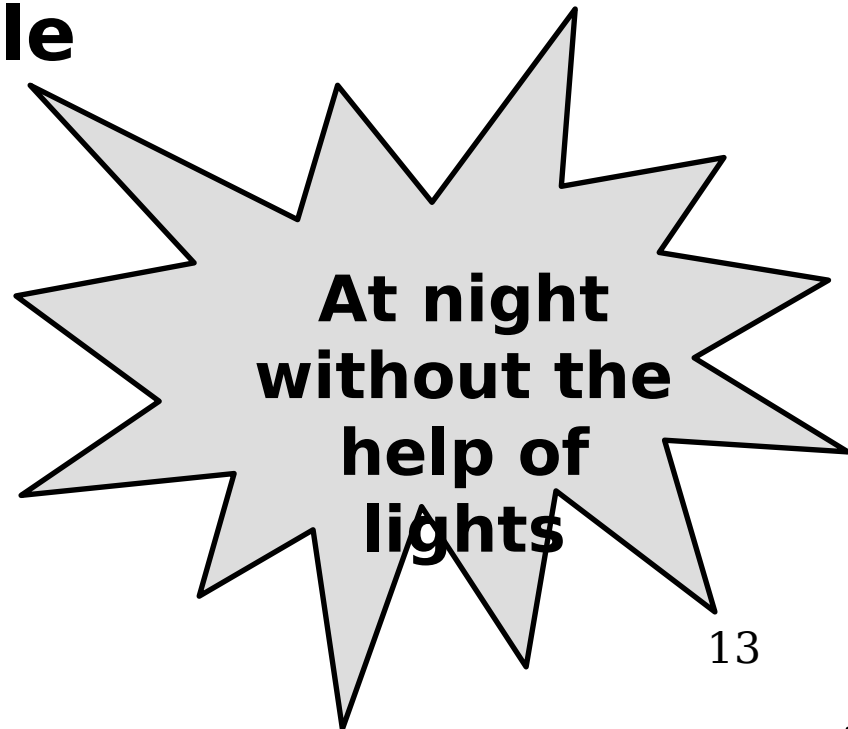
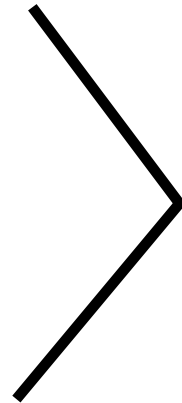
What are Night Vision Goggles

Night Vision Goggles are devices that make an object more visible during periods of low light levels. Their performance is directly related to the amount of light available, such as starlight and moonlight.

NIGHT VISION GOGGLE DRIVING OPERATIONS

Advantages

- **Better view of the surrounding area and object identification at night**
- **NVGs make it possible**
 - ~~to~~ **Read**
 - ✦ **Patrol**
 - ✦ **Provide medical aid**
 - ✦ **Drive**
 - ✦ **Walk**
 - ✦ **Observe the enemy**



NIGHT VISION GOGGLE DRIVING OPERATIONS

Disadvantages

- ◎ **Performance is reduced in rain, haze, fog, snow or smoke.**
- ◎ **Visual acuity is reduced.**
- ◎ **Limited field of view.**
- ◎ **Reduced depth perception.**
- ◎ **Overconfidence.**
- ◎ **Focal range.**

NIGHT VISION GOGGLE DRIVING OPERATIONS

Infrared Illuminator

**The IR (*INFRARED*) *ILLUMINATOR*
makes the NVG an active system
capable of being detected by
*THE THREAT.***

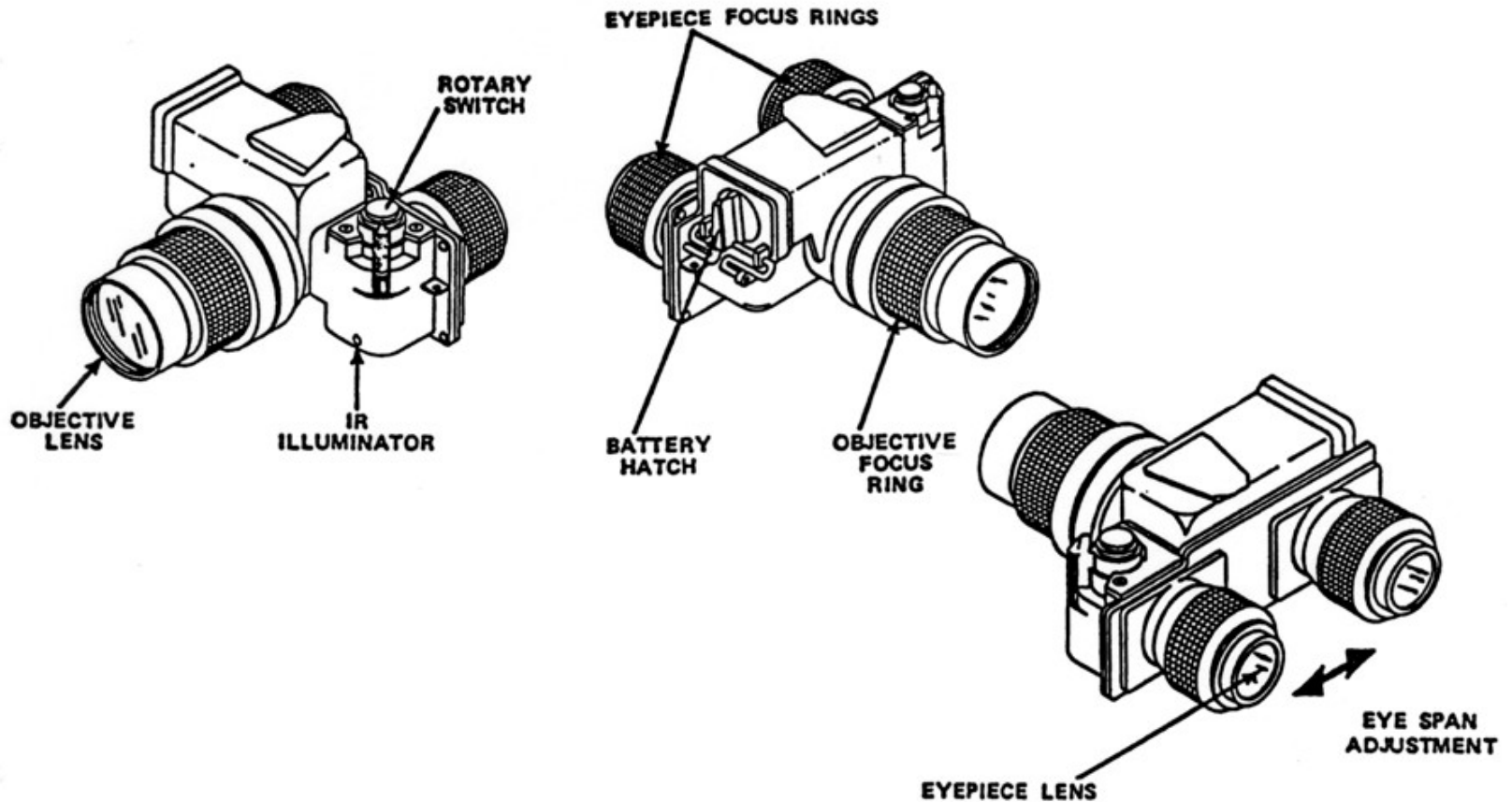
NIGHT VISION GOGGLE DRIVING OPERATIONS

General Characteristics

- **Single-color Viewing**
- **Monochromatic Adaptation**
- **Dark Adaptation**
- **Spatial Disorientation**

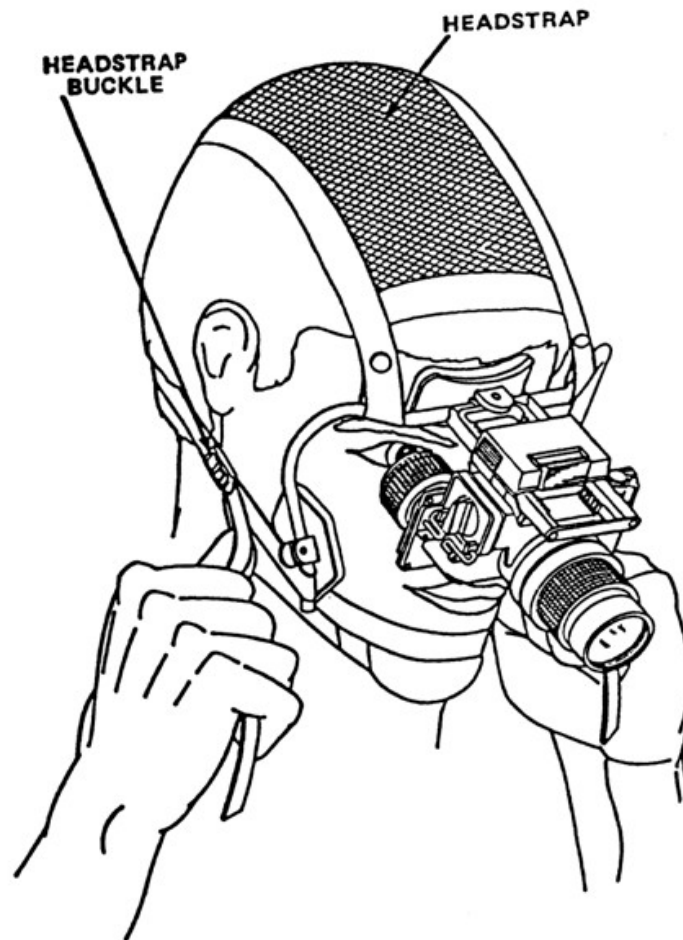
NIGHT VISION GOGGLE DRIVING OPERATIONS

AN/PVS-7A SERIES NVG



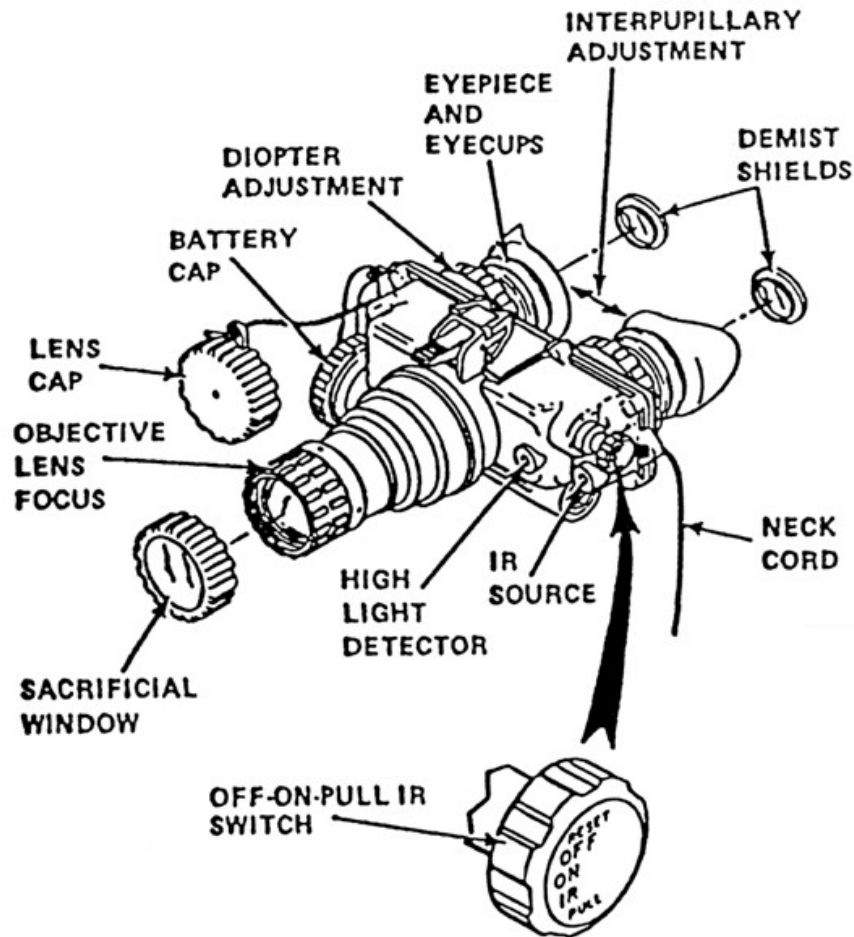
NIGHT VISION GOGGLE DRIVING OPERATIONS

AN/PVS-7A SERIES NVG



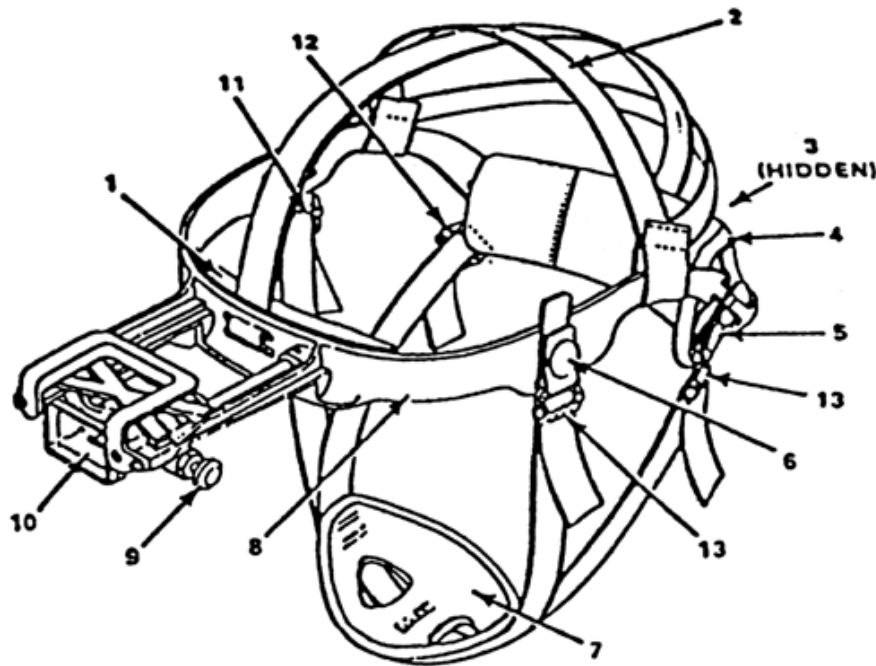
NIGHT VISION GOGGLE DRIVING OPERATIONS

AN/PVS-7B SERIES NVG



NIGHT VISION GOGGLE DRIVING OPERATIONS

AN/PVS-7B SERIES NVG



1. BROWPAD (THICK, MEDIUM OR THIN)
2. CROSS-STRAP ASSEMBLY
3. VERTICAL ADJUSTMENT
4. NECKPAD
5. LEFT REAR CHIN STRAP SNAP AND ADJUSTMENT
6. LEFT FRONT CHIN STRAP SNAP AND ADJUSTMENT
7. CHIN CUP ASSEMBLY
8. HEADBAND ASSEMBLY
9. SOCKET RELEASE BUTTON
10. HEADMOUNT SOCKET ASSEMBLY
11. RIGHT FRONT CHIN STRAP ADJUSTMENT
12. RIGHT REAR CHIN STRAP ADJUSTMENT
13. SLIDING BAR BUCKLES

NIGHT VISION GOGGLE DRIVING OPERATIONS

Driving with Goggles

- **Developed through continuous practice.**
- **Awareness of NVG *CAPABILITIES* and *LIMITATIONS* is KEY**
- **EMERGENCY PROCEDURES:**
 - **Effects of oncoming headlights**
 - **Tube failure while driving**
 - **Vehicle breakdown procedures**
 - **Low battery light indicator**
- ▮ **Speed Discipline**
- ▮ **Communication**
- ▮ **Assistant Operator Responsibilities**



Night Vision Devices

Review & Summary